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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,202	06/23/2006	Claire Divoux	292748US2PCT	9110
22850	7590	06/29/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	
			NOTIFICATION DATE	DELIVERY MODE
			06/29/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/584,202	<b>Applicant(s)</b> DIVOUX, CLAIRE	
	<b>Examiner</b> KARL I.E. TAMAI	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 63-124 is/are pending in the application.
- 4a) Of the above claim(s) 68-71, 75-77, 83-86, 89, 90, 93, 95-99 and 102-124 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 63-67, 72-74, 78-82, 87, 88, 91, 92, 94, 100 and 101 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/25/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species I, figures 1-4, 13A and 14a in the reply filed on 5/1/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The Applicant selected Claims 63-67, 72-74, 78-82, 87, 88, and 92-101 to read on figures 1-4, 13a, and 14a, however claims 93 and 95-99 read on the electrical contact of Figure 9a.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulation on the moving electrode of claim 65 and the mobile electrode, the fixed electrode, and the pivot being approximately in the same plane of claim 94 must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

5. Claims 63-67, 72-74, 100, and 101 are objected to because of the following informalities: The claims are vague and indefinite because "possibly moving away from the substrate by mechanical forces" is not a limitation because "possibly" is an uncertain limitation including all outcomes: possibly will move away from the substrate and possibly it will not.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 94 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not enable the mobile electrode, the fixed electrode, and the pivot being approximately in the same plane.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 63, 64, 67, 73, 74, and 100 are rejected under 35 U.S.C. 102(b) as being anticipated by Rauch et al. (Rauch)(US 5408355). Rauch teaches at least one mobile electrode 1, including a thickness(part) perpendicular to the substrate, that is free to move with respect to a substrate 2 having at least two electrodes 3 located on a same side (below) the mobile electrode and each electrode 3 facing a part of the mobile electrode 1; and means for forming at least one pivot (which reads on a pad or arm

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extending laterally from the center of the mobile electrode) 4b of at least one portion of the mobile electrode 1, wherein the mobile electrode 1 may bear on the pivot 4b when one of the fixed electrodes 3 attracts the part of the mobile electrode facing the fixed electrode, the other part of the mobile electrode (on the opposite side of the pivot 4b) possibly moving away from the substrate by mechanical return forces. Rauch teaches mover 1 fixed on the substrate by springs 6. Rauch teaches the mobile electrode 1 being four electrode forming arms on opposite sides of the pivot 4b, with one end fixed to the substrate by springs 6 and the other end free to move on the pivot.

10. Claims 63, 64, 67, 73, and 100 are rejected under 35 U.S.C. 102(b) as being anticipated by Garcia (US 6220561). Garcia teaches at least one mobile electrode 601, including a thickness(part) perpendicular to the substrate, that is free to move with respect to a substrate 600 having at least two electrodes 602, 603 located on a same side (below) the mobile electrode and each electrode 602, 603 facing a part of the mobile electrode 601; and means for forming at least two pivots (which reads on a pad or arm extending laterally from the center of the mobile electrode) 604, 605 of at least one portion of the mobile electrode 601, wherein the mobile electrode 601 may bear on the pivot 604, 605 when one of the fixed electrodes 602, 603 attracts the part of the mobile electrode 601 facing the fixed electrode, the other part of the mobile electrode possibly moving away from the substrate by mechanical return forces. Garcia teaches the moving electrode fixed to the substrate by springs 610, 611. Garcia teaches the electrodes 602, 603 facing the ends of the mobile electrode on opposite sides of the pivots 604, 605.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 65 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355) in further view of Miller et al. (Miller)( 2002-0171327). Rauch teaches every aspect of the invention except an insulation layer formed on the substrate and/or the mobile electrode. Miller teaches an insulating layer 116 on the stator electrodes to prevent short circuiting (paragraph 0111). It would have been obvious to a person of ordinary skill in the electrostatic actuator art at the time of the invention to construct the actuator of Rauch with the insulating layer on the substrate to prevent short circuiting, as taught by Miller.

13. Claims 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355), in further view of Clark et al. (Clark)(US 6384952). Rauch teaches every aspect of the invention except the mobile/flexible electrode connected to a mirror membrane by a pad. Clark teaches an electrostatic actuator with the moving electrodes connected to a mirror membrane by a pad 540 to provide superior optical (col. 5, lines 60-65). It would have been obvious to a person of ordinary skill in the electrostatic actuator art to construct the actuator of Rauch with the flexible electrode connected to a mirror membrane by a pad to provide superior optical characteristics from the electrostatically controlled actuator, as taught by Clark.

14. Claims 78, 79, 82, 88, and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355), in further view of Fleming (US 5867302). Rauch teaches every aspect of the invention except mobile part having at least two electrodes separated by an insulating part. Fleming teaches the movable being two electrodes 24 separated by an insulating part 14 (col. 3, line 27) to allow for individual control/addressing of the electrodes. It would have been obvious to a person of ordinary skill in the electrostatic actuator art to construct the actuator of Rauch mobile part having at least two electrodes separated by an insulating part to provide individual control over the electrode pairs as taught by Fleming.

15. Claims 80 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355) and Fleming (US 5867302), in further view of Miller et al. (Miller)( 2002-0171327). Rauch and Fleming teach every aspect of the invention except an insulation layer formed on the substrate and/or the mobile electrode. Miller teaches an insulating layer 116 on the stator electrodes to prevent short circuiting (paragraph 0111). It would have been obvious to a person of ordinary skill in the electrostatic actuator art at the time of the invention to construct the actuator of Rauch and Fleming with the insulating layer on the substrate to prevent short circuiting, as taught by Miller.



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16. Claims 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355) and Fleming (US 5867302), in further view of Clark et al. (Clark)(US 6384952). Rauch and Fleming teach every aspect of the invention except the mobile/flexible electrode connected to a mirror membrane by a pad. Clark teaches an electrostatic actuator with the moving electrodes connected to a mirror membrane by a pad 540 to provide superior optical (col. 5, lines 60-65). It would have been obvious to a person of ordinary skill in the electrostatic actuator art to construct the actuator of Rauch and Fleming with the flexible electrode connected to a mirror membrane by a pad to provide superior optical characteristics from the electrostatically controlled actuator, as taught by Clark.

17. Claim 94 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355) in further view of Miller et al. (Miller)( 2002-0171327). Rauch teaches the pivot on the same plane as the moving electrode (see figures 2c and 3). Rauch teaches every aspect of the invention except the mobile electrode, the fixed electrode, and the pivot being approximately in the same plane. Miller teaches the mobile electrode 112 and the fixed electrode fixed electrode being coplanar to provide a reliable, contact free actuator (see paragraph 0112-0114). It would have been obvious to a person of ordinary skill in the electrostatic actuator art at the time of the invention to construct the actuator of Rauch with the mobile electrode, the fixed electrode, and the pivot being approximately in the same plane on the same plate to provide a reliable, contact free actuator.

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18. Claim 101 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauch et al. (Rauch)(US 5408355), in further view of Fleming (US 5867302). Rauch teaches the electrode gap spacing formed by the pivot is a result effective variable for changing the capacitance between the stationary and moving parts (col. 6, line 3-6) and the gap/distance is changed by the size of the pivot (col. 5, lines 25-28). Rauch teaches every aspect of the invention except the means for forming the pivot being used to hold a point of a mobile electrode at a height of between 50 nm and 20 um with respect to the substrate. Fleming teaches the spacing between the electrostatic electrodes is between 0.5 – 2 um (sacrificial layer 26 forming the gap, col. 4, line 43). It would have been obvious to a person of ordinary skill in the electrostatic actuator art to construct the actuator of Rauch with the means for forming the pivot being used to hold a point of a mobile electrode at a height of between 50 nm and 20 um with respect to the substrate optimize the capacitance of the actuator as suggested by Rauch, and taught by Fleming to provide an effective electrostatic actuator.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mrs. Quyen Leung, can be reached at (571) 272 - 8188. The facsimile number for the Group is (571) 273 - 8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Karl I Tamai/  
PRIMARY PATENT EXAMINER  
June 25, 2009